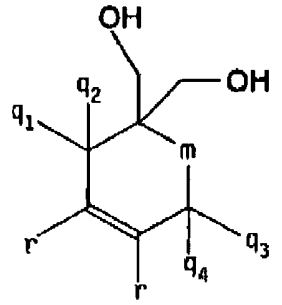
AMENDMENT

Claim 1. (Currently amended) An oxygen barrier composition, comprising:

an oxygen barrier polymer, an oxygen scavenging polymer, and an oxidation catalyst, wherein the oxygen scavenging polymer is selected from the group consisting of ethylene/methyl acrylate/cyclohexenylmethyl acrylate terpolymer (EMCM), ethylene/vinyl cyclohexene copolymer (EVCH), ethylene/cyclohexenylmethyl acrylate copolymer (ECHA), ~~and~~ cyclohexenylmethyl acrylate homopolymer (CHAA), polyesters comprising monomers derived from structure II:



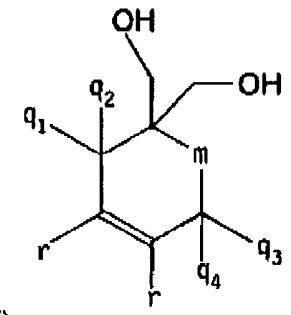
(II)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl, m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive, and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen; polyesters comprising monomers derived from tetrahydrophthalic anhydride; unsaturated polyolefins; nylon MXD6; and polymers with an ethylenic backbone and at least one benzylic pendant group.

Claim 2. (Original) The composition of claim1, wherein the composition has an oxygen transmission rate at least 5 times lower than that of the oxygen barrier polymer alone.

Claim 3. (Original) The composition of claim 1, wherein the oxygen barrier polymer is selected from poly(ethylene vinyl alcohol) (EVOH), polyacrylonitrile, a copolymer comprising acrylonitrile, poly(vinylidene dichloride) (PVDC), polyethylene terephthalate (PET), polyethylene napthalate (PEN), or polyamide other than MXD6.

Claim 4. (Withdrawn) The composition of claim 1, wherein the oxygen scavenging polymer is selected from polyesters comprising monomers derived from structure II:



(II)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl, m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive, and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen; polyesters comprising monomers derived from tetrahydrophthalic anhydride; unsaturated polyolefins; nylon MXD6; or polymers with an ethylenic backbone and at least one benzylic pendant group.

Claim 5. (Canceled)

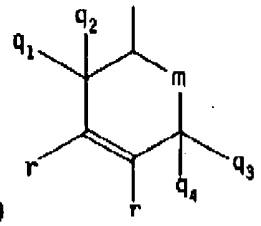
Claim 6. (Canceled)

Claim 7. (Original) The composition of claim 1, further comprising a compatibilizer.

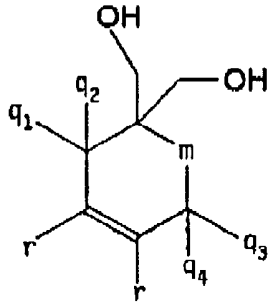
Claim 8. (Withdrawn) The composition of claim 7, wherein the compatibilizer is selected from anhydride-modified or acid-modified poly(ethylene acrylate), poly(ethylene vinyl acetate), or polyethylene; or maleic anhydride-modified EMCM.

Claim 9. (Original) The composition of claim 7, wherein the compatibilizer comprises a block copolymer of (i) EVOH, PVDC, PET, PEN, or polyamide other than MXD6 and (ii) a

polymer comprising a cycloalkenyl group having the structure I, or comprising a monomer derived from structure II:



(I)



(II)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl; m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive; and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen.

Claim 10. (Original) The composition of claim 9, wherein the compatibilizer comprises a block copolymer of EVOH, PET, PVDC, PEN, or polyamide other than MXD6 with EMCM, ECHA, EVCH, or CHAA.

Claim 11. (Original) The composition of claim 1, wherein the oxygen scavenging polymer is present as an insoluble filler.

Claim 12. (Original) The composition of claim 1, wherein the oxidation catalyst comprises a transition metal selected from cobalt, copper, nickel, iron, manganese, rhodium, or ruthenium.

Claim 13. (Original) The composition of claim 12, wherein the oxidation catalyst is a salt comprising a counterion selected from C_1-C_{20} alkanoates.

Claim 14. (Original) The composition of claim 13, wherein the transition metal salt is cobalt oleate, cobalt stearate, or cobalt neodecanoate.

Claim 15. (Original) The composition of claim 1, further comprising a photoinitiator.

Claim 16. (Original) The composition of claim 15, wherein the photoinitiator is selected from benzophenone derivatives containing at least two benzophenone moieties and having the formula:

$A_a(B)_b$

wherein

A is a bridging group selected from sulfur; oxygen; carbonyl; -SiR"$_2$-, wherein each R" is individually selected from alkyl groups containing from 1 to 12 carbon atoms, aryl groups containing 6 to 12 carbon atoms, or alkoxy groups containing from 1 to 12 carbon atoms; -NR'"-, wherein R'" is an alkyl group containing 1 to 12 carbon atoms, an aryl group containing 6 to 12 carbon atoms, or hydrogen; or an organic group containing from 1 to 50 carbon atoms;

a is an integer from 0 to 11;

B is a substituted or unsubstituted benzophenone group; and

b is an integer from 2 to 12.

Claim 17. (Original) The composition of claim 16, wherein the photoinitiator is selected from dibenzoyl biphenyl, substituted dibenzoyl biphenyl, benzoylated terphenyl, substituted

benzoylated terphenyl, tribenzoyl triphenylbenzene, substituted tribenzoyl triphenylbenzene, benzoylated styrene oligomer, or substituted benzoylated styrene oligomer.

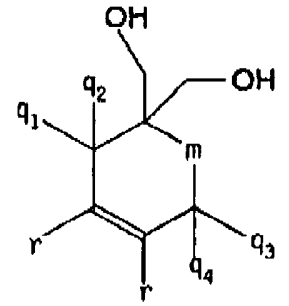
Claim 18. (Original) The composition of claim 1, further comprising an antioxidant.

Claim 19. (Original) The composition of claim 18, wherein the antioxidant is selected from 2,6-di(t-butyl)-4-methylphenol(BHT), 2,2'-methylene-bis(6-t-butyl-p-cresol), triphenylphosphite, tris-(nonylphenyl)phosphite, vitamin E, tetra-bismethylene 3-(3,5-ditertbutyl-4-hydroxyphenyl)-propionate methane, or dilaurylthiodipropionate.

Claim 20. (Currently amended) A packaging article, comprising:

at least one oxygen barrier layer comprising an oxygen barrier polymer and an oxygen scavenging polymer,

wherein the oxygen scavenging polymer is selected from the group consisting of ethylene/methyl acrylate/cyclohexenylmethyl acrylate terpolymer (EMCM), ethylene/vinyl cyclohexene copolymer (EVCH), ethylene/cyclohexenylmethyl acrylate copolymer (ECHA), ~~and~~ cyclohexenylmethyl acrylate homopolymer (CHAA), polyesters comprising monomers derived from structure II:



(II)

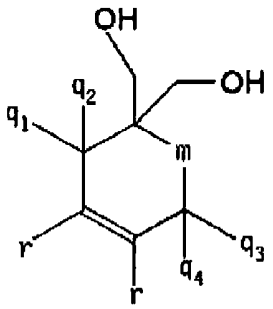
wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl, m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive, and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen; polyesters comprising monomers derived from

tetrahydrophthalic anhydride; unsaturated polyolefins; nylon MXD6; and polymers with an ethylenic backbone and at least one benzylic pendant group.

Claim 21. (Original) The packaging article of claim 20, wherein the packaging article consists essentially of a single layer.

Claim 22. (Original) The packaging article of claim 20, wherein the oxygen barrier layer comprises poly(ethylene vinyl alcohol) (EVOH), polyacrylonitrile, a copolymer comprising acrylonitrile, poly(vinylidene dichloride) (PVDC), polyethylene terephthalate (PET), polyethylene napthalate, or polyamide other than MXD6.

Claim 23. (Withdrawn) The packaging article of claim 20, wherein the oxygen scavenging polymer is selected from wherein the oxygen scavenging polymer is selected from polyesters comprising monomers derived from structure II:



(II)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl, m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive, and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen; polyesters comprising monomers derived from tetrahydrophthalic anhydride; unsaturated polyolefins; nylon MXD6; or polymers with an ethylenic backbone and at least one benzylic pendant group.

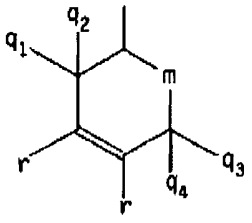
Claim 24. (Canceled)

Claim 25. (Canceled)

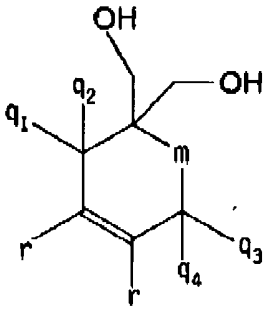
Claim 26. (Original) The packaging article of claim 20, wherein the oxygen barrier layer further comprises a compatibilizer.

Claim 27. (Withdrawn) The packaging article of claim 26, wherein the compatibilizer is selected from anhydride-modified or acid-modified poly(ethylene acrylate), poly(ethylene vinyl acetate), or polyethylene; or maleic anhydride (MAH)-modified EMCM.

Claim 28. (Original) The packaging article of claim 26, wherein the compatibilizer comprises a block copolymer of (i) EVOH, PVDC, PET, polyethylene napthalate, or polyamide other than MXD6 and (ii) a polymer comprising a cycloalkenyl group having the structure I, or comprising a monomer derived from structure II:



(I)



(II)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl; m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive; and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen.

Claim 29. (Original) The packaging article of claim 28, wherein the compatibilizer comprises a block copolymer of EVOH, PET, PVDC, polyethylene naphthalate, or polyamide other than MXD6 with EMCM, ECHA, EVCH, or CHAA.

Claim 30. (Original) The packaging article of claim 20, wherein the oxygen scavenging polymer is present in the oxygen barrier layer as an insoluble filler.

Claim 31. (Original) The packaging article of claim 20, further comprising a transition metal salt in the oxygen barrier layer or a layer adjacent to the oxygen barrier layer.

Claim 32. (Original) The packaging article of claim 31, wherein the transition metal is selected from cobalt, copper, nickel, iron, manganese, rhodium, or ruthenium.

Claim 33. (Original) The packaging article of claim 32, wherein the transition metal salt comprises a counterion selected from C_1-C_{20} alkanoates.

Claim 34. (Original) The packaging article of claim 33, wherein the transition metal salt is cobalt oleate, cobalt stearate, or cobalt neodecanoate.

Claim 35. (Original) The packaging article of claim 20, further comprising a photoinitiator in the oxygen barrier layer.

Claim 36. (Original) The packaging article of claim 35, wherein the photoinitiator is selected from benzophenone derivatives containing at least two benzophenone moieties and having the formula:

$A_a(B)_b$

wherein

A is a bridging group selected from sulfur; oxygen; carbonyl; -SiR"2-, wherein each R" is individually selected from alkyl groups containing from 1 to 12 carbon atoms, aryl groups containing 6 to 12 carbon atoms, or alkoxy groups containing from 1 to 12 carbon atoms; -NR"'-, wherein R"' is an alkyl group containing 1 to 12 carbon atoms, an aryl group containing 6 to 12 carbon atoms, or hydrogen; or an organic group containing from 1 to 50 carbon atoms;

a is an integer from 0 to 11;

B is a substituted or unsubstituted benzophenone group; and

b is an integer from 2 to 12.

Claim 37. (Original) The packaging article of claim 36, wherein the photoinitiator is selected from dibenzoyl biphenyl, substituted dibenzoyl biphenyl, benzoylated terphenyl, substituted benzoylated terphenyl, tribenzoyl triphenylbenzene, substituted tribenzoyl triphenylbenzene, benzoylated styrene oligomer, or substituted benzoylated styrene oligomer.

Claim 38. (Original) The packaging article of claim 20, further comprising an antioxidant in the oxygen barrier layer.

Claim 39. (Original) The packaging article of claim 38, wherein the antioxidant is selected from 2,6-di(t-butyl)-4-methylphenol(BHT), 2,2'-methylene-bis(6-t-butyl-p-cresol), triphenylphosphite, tris-(nonylphenyl)phosphite, vitamin E, tetra-bismethylene 3-(3,5-ditertbutyl-4-hydroxyphenyl)-propionate methane, or dilaurylthiodipropionate.

Claim 40. (Previously presented) The packaging article of claim 20, further comprising an oxygen barrier layer, wherein the oxygen barrier layer does not comprise a polymer comprising a cycloalkenyl group having structure (I).

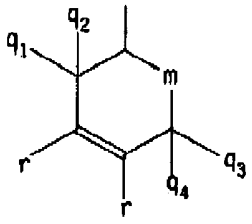
Claim 41. (Previously presented) The packaging article of claim 40, wherein the oxygen barrier layer not comprising a polymer comprising a cycloalkenyl group having structure

(I) comprises poly(ethylene vinyl alcohol) (EVOH), polyacrylonitrile (PAN), a copolymer comprising acrylonitrile, poly(vinylidene dichloride) (PVDC), polyethylene terephthalate (PET), polyethylene napthalate (PEN), or polyamide other than MXD6.

Claim 42. (Original) The packaging article of claim 20, further comprising a structural layer.

Claim 43. (Original) The packaging article of claim 42, wherein the structural layer comprises PET, polyamide, polypropylene, polyethylene, low density polyethylene, very low density polyethylene, ultra-low density polyethylene, high density polyethylene, polyvinyl chloride, ethylene-vinyl acetate, ethylene-alkyl (meth)acrylates, ethylene-(meth)acrylic acid, ethylene-(meth)acrylic acid ionomers, paperboard, or cardboard.

Claim 44. (Previously presented) The packaging article of claim 20, further comprising an oxygen scavenging layer, wherein the oxygen scavenging layer comprises an oxygen scavenging polymer comprising an ethylenic backbone and a cycloalkenyl group with structure I:



(I)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl; m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive; and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen.

Claim 45. (Canceled)

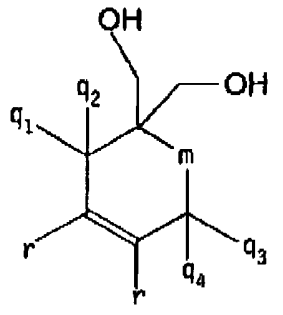
Claim 46. (Original) The packaging article of claim 44, wherein the oxygen scavenging polymer in the oxygen scavenging layer is selected from ethylene/methyl acrylate/cyclohexenylmethyl acrylate terpolymer (EMCM), ethylene/vinyl cyclohexene copolymer (EVCH), ethylene/cyclohexenylmethyl acrylate copolymer (ECHA), or cyclohexenylmethyl acrylate homopolymer (CHAA).

Claim 47. (Original) The packaging article of claim 44, wherein the oxygen scavenging layer is a liner, coating, sealant, gasket, adhesive, non-adhesive insert, or fibrous mat insert in the packaging article.

Claim 48. (Original) The packaging article of claim 20, wherein the packaging article is in the form of a single layer flexible article, a multilayer flexible article, a single layer rigid article, or a multilayer rigid article.

Claim 49. (Currently amended) A method of making an oxygen barrier composition comprising an oxygen barrier polymer and an oxygen scavenging polymer, comprising:

providing the oxygen barrier polymer and the oxygen scavenging polymer; and blending the oxygen barrier polymer and the oxygen scavenging polymer to form the oxygen barrier composition, wherein the oxygen scavenging polymer is selected from ethylene/methyl acrylate/cyclohexenylmethyl acrylate terpolymer (EMCM), ethylene/vinyl cyclohexene copolymer (EVCH), ethylene/cyclohexenylmethyl acrylate copolymer (ECHA), ~~and~~ cyclohexenylmethyl acrylate homopolymer (CHAA), polyesters comprising monomers derived from structure II:

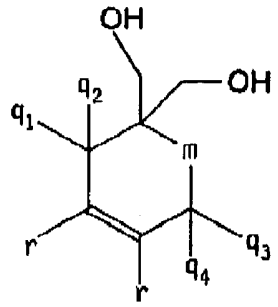


(II)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl, m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive, and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen; polyesters comprising monomers derived from tetrahydrophthalic anhydride; unsaturated polyolefins; nylon MXD6; and polymers with an ethylenic backbone and at least one benzylic pendant group.

Claim 50. (Original) The method of claim 49, wherein the oxygen barrier polymer is selected from poly(ethylene vinyl alcohol) (EVOH), polyacrylonitrile (PAN), a copolymer comprising acrylonitrile, poly(vinylidene dichloride) (PVDC), polyethylene terephthalate (PET), polyethylene napthalate, or polyamide other than MXD6.

Claim 51. (Withdrawn) The method of claim 49, wherein the oxygen scavenging polymer is selected from polyesters comprising monomers derived from structure II:



(II)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl, m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive, and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen; polyesters comprising monomers derived from tetrahydrophthalic anhydride; unsaturated polyolefins; nylon MXD6; or polymers with an ethylenic backbone and at least one benzylic pendant group.

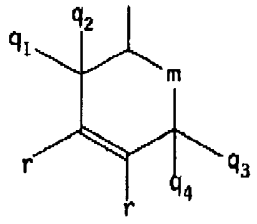
Claim 52. (Canceled)

Claim 53. (Canceled)

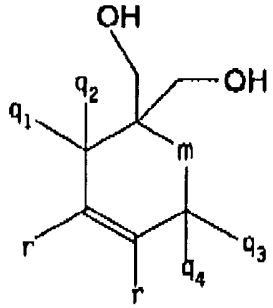
Claim 54. (Original) The method of claim 49, wherein the blending step further comprises blending a compatibilizer with the oxygen barrier polymer and the oxygen scavenging polymer.

Claim 55. (Original) The method of claim 54, wherein the compatibilizer is selected from anhydride-modified or acid-modified poly(ethylene acrylate), poly(ethylene vinyl acetate), or polyethylene; or MAH-modified EMCM.

Claim 56. (Original) The method of claim 54, wherein the compatibilizer comprises a block copolymer of (i) EVOH, PVDC, PET, polyethylene napthalate, or polyamide other than MXD6 and (ii) a polymer comprising a cycloalkenyl group having the structure I, or comprising a monomer derived from structure II:



(I)



(II)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl; m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive; and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen.

Claim 57. (Original) The method of claim 56, wherein the compatibilizer is a block copolymer of EVOH, PET, PVDC, polyethylene napthalate, or polyamide other than MXD6 with EMCM, ECHA, EVCH, or CHAA.

Claim 58. (Original) The method of claim 49, wherein the blending occurs during a reactive extrusion.

Claim 59. (Previously presented) A method of making an oxygen barrier composition comprising an oxygen barrier polymer and an oxygen scavenging polymer, wherein the oxygen scavenging polymer is present as an insoluble filler, comprising:

providing the oxygen barrier polymer and the oxygen scavenging polymer, wherein the oxygen scavenging polymer is selected from the group consisting of ethylene/methyl acrylate/cyclohexenylmethyl acrylate terpolymer (EMCM), ethylene/vinyl cyclohexene copolymer (EVCH), ethylene/cyclohexenylmethyl acrylate copolymer (ECHA), and cyclohexenylmethyl acrylate homopolymer (CHAA);

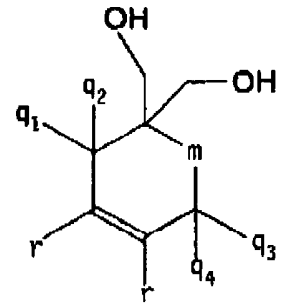
cross-linking the oxygen scavenging polymer with itself, to form an insoluble oxygen scavenging polymer; and

mixing the oxygen barrier polymer and the insoluble oxygen scavenging polymer, to form the oxygen barrier composition.

Claim 60. (Currently amended) A method of forming an oxygen barrier layer in a packaging article, comprising:

providing an oxygen barrier composition comprising an oxygen barrier polymer and an oxygen scavenging polymer, wherein the oxygen scavenging polymer is selected from the group consisting of ethylene/methyl acrylate/cyclohexenylmethyl acrylate terpolymer (EMCM), ethylene/vinyl cyclohexene copolymer (EVCH), ethylene/cyclohexenylmethyl acrylate

copolymer (ECHA), ~~and~~ cyclohexenylmethyl acrylate homopolymer (CHAA), polyesters comprising monomers derived from structure II:



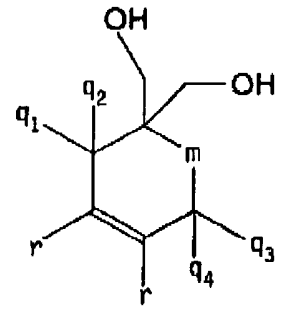
(II)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl, m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive, and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen; polyesters comprising monomers derived from tetrahydrophthalic anhydride; unsaturated polyolefins; nylon MXD6; and polymers with an ethylenic backbone and at least one benzylic pendant group; and

forming the composition into the packaging article or an oxygen barrier layer thereof.

Claim 61. (Original) The method of claim 60, wherein the oxygen barrier polymer is selected from poly(ethylene vinyl alcohol) (EVOH), polyacrylonitrile, a copolymer comprising acrylonitrile, poly(vinylidene dichloride) (PVDC), polyethylene terephthalate (PET), polyethylene napthalate, or polyamide other than MXD6.

Claim 62. (Original) The method of claim 60, wherein the oxygen scavenging polymer is selected from polyesters comprising monomers derived from structure II:



(II)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl, m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive, and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen; polyesters comprising monomers derived from tetrahydrophthalic anhydride; unsaturated polyolefins; nylon MXD6; or polymers with an ethylenic backbone and at least one benzylic pendant group.

Claim 63. (Canceled)

Claim 64. (Canceled)

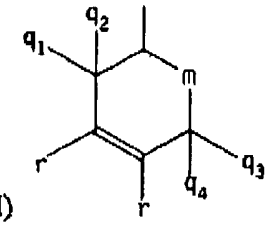
Claim 65. (Original) The method of claim 60, wherein the forming step comprises forming a transition metal salt into the oxygen barrier layer or a layer adjacent to the oxygen barrier layer of the packaging article.

Claim 66. (Original) The method of claim 60, wherein the oxygen barrier layer further comprises a photoinitiator.

Claim 67. (Original) The method of claim 60, wherein the oxygen barrier layer further comprises an antioxidant.

Claim 68. (Previously presented) The method of claim 60, wherein the forming step further comprises forming an oxygen barrier layer in the packaging article, wherein the oxygen

barrier layer does not comprise a polymer comprising a cycloalkenyl group having the structure I:

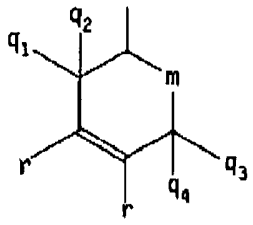


(I)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl; m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive; and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen.

Claim 69. (Original) The method of claim 60, wherein the forming step further comprises forming a structural layer in the packaging article.

Claim 70. (Previously presented) The method of claim 60, wherein the forming step further comprises forming an oxygen scavenging layer comprising a polymer comprising a cycloalkenyl group having the structure I:



(I)

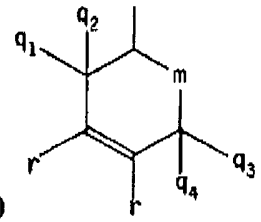
wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl; m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive; and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen in the packaging article.

Claim 71. (Original) The method of claim 60, wherein the forming step further comprises forming the packaging article as a single layer flexible article, a multilayer flexible article, a single layer rigid article, or a multilayer rigid article.

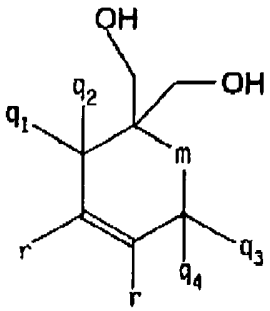
Claim 72. (Original) The method of claim 60, wherein the oxygen barrier composition further comprises a compatibilizer.

Claim 73. (Withdrawn) The method of claim 72, wherein the compatibilizer is selected from anhydride-modified or acid-modified poly(ethylene acrylate), poly(ethylene vinyl acetate), or polyethylene; or MAH-modified EMCM.

Claim 74. (Original) The method of claim 72, wherein the compatibilizer comprises a block copolymer of (i) EVOH, PET, polyethylene napthalate, or polyamide other than MXD6 and (ii) a polymer comprising a cycloalkenyl group having the structure I, or comprising a monomer derived from structure II:



(I)



(II)

wherein q_1, q_2, q_3, q_4, and r are independently selected from hydrogen, methyl, or ethyl; m is $-(CH_2)_n-$, wherein n is an integer from 0 to 4, inclusive; and, when r is hydrogen, at least one of q_1, q_2, q_3, and q_4 is also hydrogen.

Claim 75. (Original) The method of claim 74, wherein the compatibilizer is a block copolymer of EVOH, PET, polyethylene napthalate, or polyamide other than MXD6 with EMCM, EVCH, or CHAA.

Claim 76. (Original) The method of claim 72, wherein the compatibilizer is formed by reactive extrusion of monomers.

Claim 77. (Original) The method of claim 74, wherein the compatibilizer is formed by adding monomers comprising the ethylenic backbone and the cycloalkenyl group to a polymer of EVOH, PET, PVDC, polyethylene napthalate, or polyamide other than MXD6.

Claim 78. (Original) The method of claim 60, wherein the oxygen scavenging polymer is present in the oxygen barrier composition as an insoluble filler.